

An Ophichthid Eel in the Coelom of a Sea Bass

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(Plates I & II)

AN object which had been taken from the body cavity of a sea bass, evidently *Centropristis striatus* (Linnaeus), and which was submitted to the American Museum of Natural History for identification, proved to be a "mummified" ophichthid eel.¹ This is clearly a case rather similar to those reported by Deraniyagala (1932) and Breder & Nigrelli (1934) for two other ophichthids, *Ophichthus apicalis* (Bennett) and *Myrichthys acuminatus* (Gronow) respectively. The present specimen is, with little doubt, referred to *Omoichelys cruentifer* (Goode & Bean). There is every reason to suppose that entry was obtained in the same way, that is, by the bass gulping down the eel and then the eel, in trying to escape, perforating the gut and backing into the coelomic cavity where it finally expired. From that point on, it induced a foreign body reaction on the part of the bass.

This individual was more extended than the *Myrichthys* above noted, which was found as one tightly compressed mass. The eel as received (Pl. I, Fig. 1) and a radiograph of it (Pl. I, Fig. 2) are shown in as nearly the same position as possible. The origin of both the dorsal and anal fins may be distinguished, as well as some of the "granular" teeth in the quartering view of the head in the radiograph. The size of the eye and the overhanging snout are distinctive (Pl. II, Fig. 1). The investing membranes of connective tissue which grew about the eel as a coelomic reaction to a foreign

body have been left intact so that what is visible in these pictures is seen through them. The object had simply been removed from the fish and permitted to dry, the membranes drying to an amber-colored, transparent, celluloid-like covering. It was quite odorless. As described by the finder, it was hard when found and has shown no change since removal. This is, of course, in agreement with the previous cases. As measured, with some difficulty because of the curvature and complete rigidity, the total length is approximately 225 mm. The bass from which the eel was taken was said to be about 200 to 230 mm. in total length. In addition to the fact that the proportions indicate *Omoichelys cruentifer*, it was evidently taken not far from the type locality of that species. This is the only species in the region which has been reported from the body of a fish. The types were taken in 120 fathoms at 39°51' N. Lat., 69°28' W. Long., while Avalon, N. J., is approximately 39°7' N. Lat., 74°13' W. Long. Goode & Bean (1895), following their description of the species (*Pisodonophis cruentifer* in their usage), wrote as follows:

"The peculiar and savage physiognomy of this fish suggests at once the idea that it is a parasitic boring form, and in confirmation of this we have specimens taken by fishermen on Jeffery's Bank and also from New-Bedford, taken by Mr. J. H. Thompson from the body of a fish. We have occasionally taken the dried and shriveled remains of a fish apparently closely related to this from salted halibut and cod-fish."

When the above was written, little was known about the significance and use of the pointed tails of these eels. The situation is evidently the reverse of what the describer thought, the

¹Dr. Florence Wood, to whom we are indebted for this specimen, obtained it from a retail fish market in Avalon, N. J. The proprietor, Mr. George Heitz, who encountered the "object" while gutting a sea bass from the "pot-boat" fleet for a customer in late September of 1952, thought at first that it was a wire that the fish had somehow swallowed.

eels in question attempting to bore their way out rather than in. Actually such a "parasitic" eel would not be likely to be trapped in the interior of a bass in such a manner.

The state of preservation of this specimen was rather remarkable, as may be seen in the photographs. Where the connective tissues which had grown about the eel were thin and tightly spread over it, the melanophores could be seen showing through the membrane as intact punctate structures (Pl. II, Figs. 1 & 2). On peeling off some of this cover, it could be seen that the eel was a dark brownish-tan with no particular pattern, the melanophores being scattered rather uniformly. "Color uniform yellowish brown," the describer wrote.

The fact that the investing membranes were amber-colored in the present case and jet black in earlier-described *Myrichthys* could be due to a variety of causes. It may be that such membranes darken with age. Because of the relative sizes of the eel and the bass, the swallowing and sealing-off here reported could not have happened very long ago. The case reported by Breder & Nigrelli (1934) may have been of years' standing, as the eel was in a large *Promicrops*. Specific differences might also conceivably account for the color differential.

Perhaps the most interesting aspect of all these cases is the ability of the fishes to survive with eels embedded in their coelomic cavities. Actually, it may be that only one in many thousands does survive such an accident. When it is realized that the whole eel, including its intestinal contents, is sealed off, decontaminated, and made sterile and inert, it would seem that some physiological activity of considerable interest is in progress. The amount of foreign protein alone would seem necessarily to invoke a great physiological reaction, and the decomposing intestinal contents would give rise to a tremendous antibody development. Since all in-

stances of this kind so far definitely reported concern percoid fishes, it is conceivable that they are more resistant than others to this kind of accident, although Goode & Bean, in the preceding reference, suggest that halibut and codfish might likewise survive such invasions.

REFERENCES

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EXPLANATION OF THE PLATES

PLATE I

- FIG. 1. Specimen of *Omochelys cruentifer* as removed from the coelom of a *Centropristis striatus*. The eel is hard and rigid, as are the investing membranes.
- FIG. 2. Radiograph of above specimen. The origin of both dorsal and anal fins is clearly evident.

PLATE II

- FIG. 3. The head of *Omochelys cruentifer* in its connective tissue wrappings. The eye and overhanging snout may be seen through the investing membranes, as well as some facial melanophores.
- FIG. 4. A portion of the mid-section of the body where the punctate melanophores may be seen clearly through the covering membrane.